

Frazier et al (U.S. Patent No. 5,193,008, Frazier) in view of Murata et al (U.S. Patent No. 5,365,258, Murata).

The objection to Figs 1 and 2 is believed to be moot in view of the letter included herewith that requests the examiner's approval as to modifying Figs 1 and 2, by adding the label "(BACKGROUND ART)" thereto.

Likewise, the objection to the title is believed to be moot in view of the present amendment thereto that makes it clearly indicate the invention to which the claims are directed.

Before discussing the outstanding rejection of Claims 1-8 over Frazier in view of Murata, it is believed that a brief review of the present invention would be helpful. In this regard, the present invention is directed to an Image forming apparatus providing non-circular beam spots overlapped in a sub-scan direction of the apparatus so as to form a central dot on a photosensitive layer. The overlapped non-circular beam spots are provided with a beam spot diameter W_s defined by $1/e^2$ of the maximum value in the exposure distribution of the beam spot, such that a ratio between W_s and an interval L between adjacent scan lines satisfies the formula $1.2 < W_s/L < 4.5$ to thereby form the central dot between adjacent scan lines in a manner that stabilizes the formed dots to increase resolution in the sub-scan direction as discussed on line 8 of page 7 through line 5 of page 8 of the specification, for example.

The outstanding rejection of Claims 1-8 over Frazier in view of Murata is traversed because no *prima facie* case of obviousness has been established that demonstrates the subject matter of these claims considered as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.

First of all, the teaching of Frazier is to vary "the 'on time' of impingement of the

laser beam on the pixels using a pulse width modulation technique” as discussed at col. 5, lines 39-42. Thus, varying “‘on time’ of impingement of the laser beam on the pixels using a pulse width modulation technique” is used with overlap of circular spots to create “additional interleaved dots . . . between adjacent scan lines” (see col. 5, lines 45-46).

However, Murata teaches avoiding the use of pulse width modulation type screening in recording plural color beams on plural different photoconductor surfaces by using beam shaping for each beam to help create overlapped elliptical beams on each different photoconductor surface shown in Fig. 11. See the discussion of col.1, line 49-col.2, line 12. Clearly, the teaching of Murata is that the use of pulse width modulation type screening as in Frazier is to be avoided and replaced by the creation of overlapped elliptical beams on the photoconductor surface as shown in Fig. 11. Clearly, however, these Fig. 11 elliptical beams are not taught to be overlapped in a sub-scan direction of the apparatus so as to form a central dot on each photosensitive layer.

In this regard, it is well established to be improper to attempt to view reference statements in the abstract instead of in the context of the teaching of the entire reference. See In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“[Reference] statements cannot be viewed in the abstract. Rather, they must be considered in the context of the teaching of the entire reference.”). Kotzab, *id.* also repeats the well established tenet that:

Further, a rejection cannot be predicated on the mere identification in [applied references] of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.

This last point is elaborated upon in In re Rouffet, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) as follows:

As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 603, 608

218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

The court in Rouffet, at 47 USPQ2d 1457, also noted that this showing of motivation extends to explaining the reasons why apparently dissimilar references would even be considered in the first place, as follows:

Indeed, the Board did not identify any motivation to choose these references for combination. Ruddy does not specifically address handover minimization. To the extent that Ruddy at all addresses handovers due to satellite motion, it addresses this subject through the selection of orbital parameters. Ruddy does not teach the choice of a particular shape and alignment of the beam projected by the satellite. Thus Ruddy addresses the handover problem with an orbit selection, not a beam shape. The Board provides no reasons that one of ordinary skill in this art, seeking to minimize handovers due to satellite motion, would combine Ruddy with Rosen and King in a manner that would render the claimed invention obvious.

Here, Murata does not suggest overlapping beams in a sub-scan direction of the apparatus so as to form a central dot on each photosensitive layer. In fact, Murata teaches the elimination of pulse width modulation which is how Frazer provides a central dot on its photosensitive layer in a sub-scan direction from separate scan beams. These two references

Murata and Frazer.

Moreover, even if the artisan were to attempt to somehow incorporate the disparate teachings of these references, he would face the need to completely redesign one or the other to operate in a totally different manner from its stated operation. Such efforts have been noted by the courts to bespeak unobviousness, not obviousness. See In re Ratti, 123 USPQ 349, 352 (CCPA 1959). Moreover, reference modifications that would render a reference unsatisfactory for its intended purpose are also not obvious. See In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

As no further issues are believed to remain outstanding relative to this application, it is respectfully submitted that this application is clearly in condition for formal allowance, and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Attorney of Record
Raymond F. Cardillo, Jr.
Registration No. 40,440



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IN THE TITLE

Please amend the title to read as follows: ✓

--IMAGE FORMING APPARATUS WITH OVERLAPPED NON-CIRCULAR
BEAM SPOTS FORMING A DOT--